

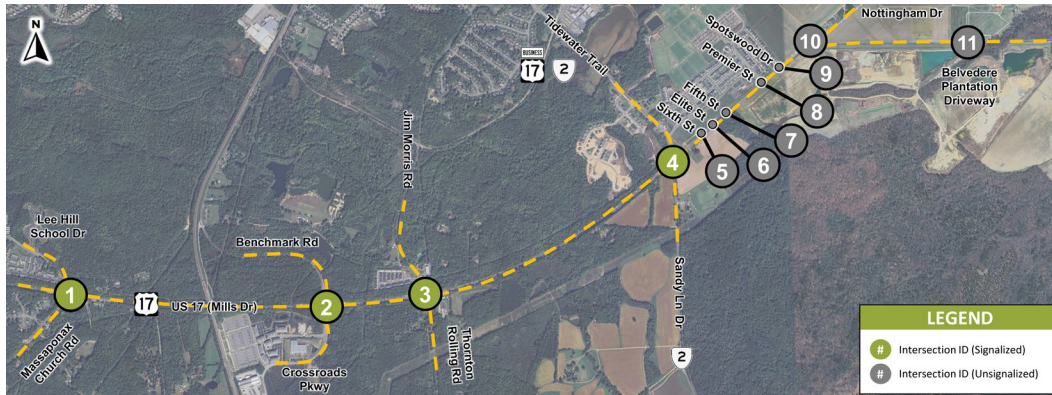
PROJECT PIPELINE NEEDS AND EXISTING CONDITIONS SUMMARY

US 17 from Massaponax Church Road to Caroline County Line

VDOT District: Fredericksburg / Locality: Spotsylvania County

FR-25-06

Sheet 1 of 2



Study Purpose, Goals, and Objectives

To analyze the operational and safety issues identified along US 17 from Massaponax Church Road to the Caroline County line with a focus on providing enhanced bicycle, pedestrian, and transit access, transportation demand management, safety improvements, and congestion mitigation.

VTrans Needs

	Congestion Mitigation
	Capacity Preservation (Keep traffic flowing smoothly)
	Bicycle Access
	Safety Improvement
	Transit Access
	Transportation Demand Management (TDM)
	Pedestrian Access

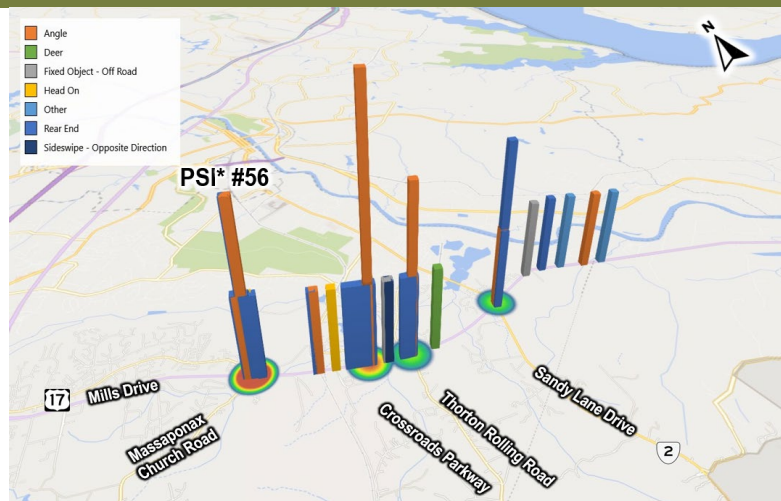
Study Facts

Major Study Intersections	4
Length of Study Area	4.5 miles
Classification	Other Principal Arterial
2023 Annual Average Daily Traffic	7,500–17,800
Speed Limit	45–55 mph

Safety Needs

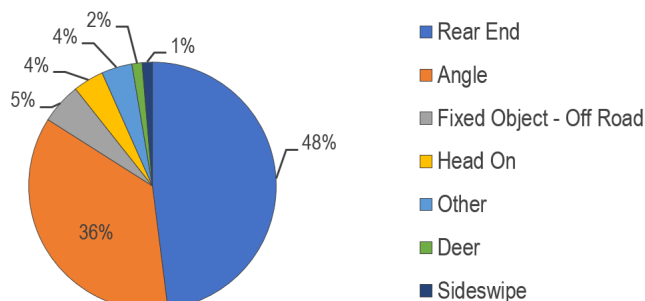
- 75 total crashes have occurred within the five-year period between 2020 and 2024
- US 17 and Benchmark Road/Crossroads Parkway had the second highest number of crashes with 17 total, six of which were rear end crashes caused by slowing traffic and four to failure to yield to right of way
- Three collisions occurred at US 17 and Tidewater Trail/Sandy Lane Drive due to a failure to yield to right of way during permitted phases; of the three collisions, one crash occurred during a flashing yellow arrow phase

*Potential for Safety Improvement (PSI) is a metric used by VDOT to identify and prioritize high-risk roadway locations for targeted safety enhancements



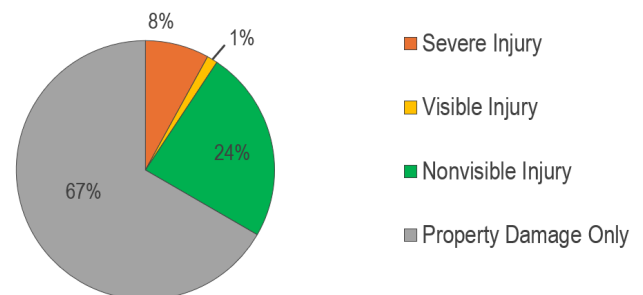
Crash Type

75 Total Crashes (2020–2024)



Crash Severity

75 Total Crashes (2020–2024)





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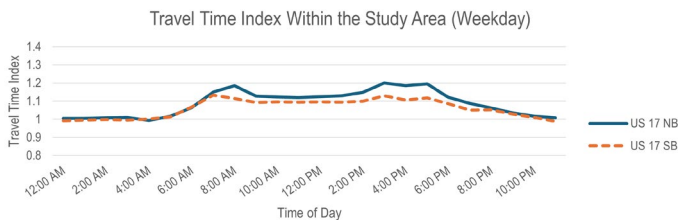
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Sheet 2 of 2

Operations Summary

- US 17 operates below the speed limit during AM and PM peaks periods on weekdays
- Largest impact to Travel Time Index (TTI)* on weekdays occurs on northbound US 17 during AM and PM peak periods

Travel Time Index*



*Travel Time Index (TTI) is the ratio of the travel time during the referenced time period to the travel time during typical conditions. For example, a TTI of 1.5 means a trip takes 50% longer than it would in free-flow conditions

Transit and TDM Needs

- No transit facilities are present along the study corridor
- Transit Access needs includes high VTrans needs west of Benchmark Road/Crossroads Parkway
- TDM needs are present west of Benchmark Road/Crossroads Parkway

Bike and Pedestrian Access Needs

- No bike and pedestrian facilities are in study area

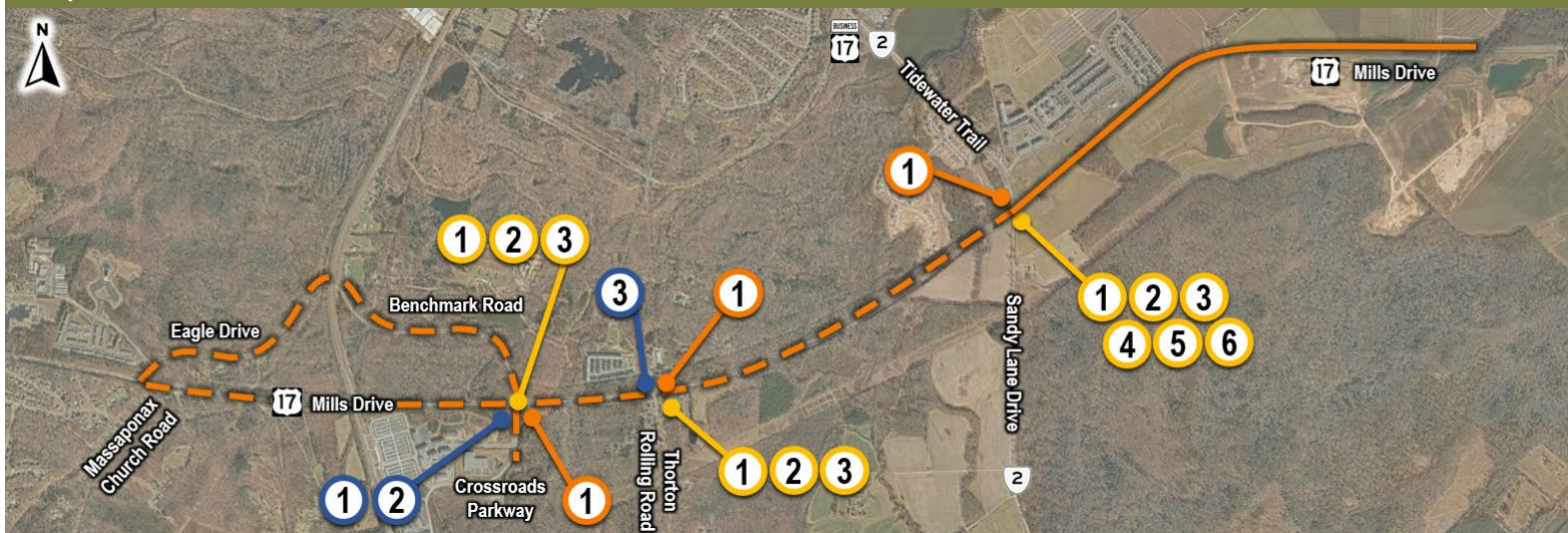
Future Developments

- Multiple developments within the study area have been approved by Spotsylvania County and are anticipated to be 90-100% built out by 2033
- Industrial developments include the Cosner Technology Campus, Crossroads Technology Park, Davenport Data Center, and Powerhouse 95 (Hunters Ridge)
- Residential development include Dominion Hills, Ruffins Reserve II, and Village at Crossroads
- Commercial land uses include a Dash-in, McDonalds, and Sheetz

Summary of Needs Identified Through Public Outreach

- Survey date: May 7–May 21, 2025
- Number of participants: 417
- Highest ranked needs: Capacity preservation, congestion mitigation, safety improvement
- Mode(s) of travel: Personal vehicle (98%), truck or commercial vehicle (5%), cycling (5%)
- Speeding/aggressive driving, high traffic volumes, the need for additional lanes along US 17, large trucks moving slowly, and poor signal timings were noted as the most common responses among participants

Proposed Solutions to Evaluate in Phase 2



Operations Improvements

- | | |
|--|---|
| 1 Extend eastbound US 17 turn lane storage | 5 Convert Tidewater Trail to left and shared through/right |
| 2 Extend westbound US 17 turn lane storage | 6 Convert Sandy Lane Drive to left and shared through/right |
| 3 Signal retiming | |
| 4 Left turn phasing improvements | |

Safety Improvements

- | |
|---------------------------------------|
| 1 Emergency vehicle preemption |
| 2 Potential for signal ahead sign |
| 3 Review clearance intervals on US 17 |

Pedestrian and Bicycle Improvements

- | |
|---|
| 1 Pedestrian signals and crosswalks on all approaches |
| Improved shoulders for bike lanes |
| Shared-use path |